



Community Faces Legacy of Radium Processing with EPA Support



EPA removes radium-contaminated soil from a neighborhood in Essex County, NJ.

U.S. Radium Site

Communities in Essex County, NJ are undergoing an intensive U.S. Environmental Protection Agency (EPA) cleanup to remove radium-contaminated soil that was the result of operations of the former U.S. Radium Corporation, which operated in Orange, NJ in the early 1900s. The majority of the cleanup is on residential properties, which poses many challenges for EPA and the families. Through close cooperation, EPA and the community have developed a cleanup program that works for all parties involved.

"The removal of the contaminated material is often complicated. In some cases, homes in Orange were built on top of contaminated soil, or the contaminated soil was used in the actual construction of the homes. In such cases, portions of the floor and/or walls may need to be removed in order to remove the contamination. EPA has worked diligently on both to limit the disruption to the lives of affected citizens, and I think we have been successful," said Carole Petersen, Chief, New Jersey Remediation Branch, EPA Region 2.

Radium: Source of Income and Contamination

Two acres in Orange, N.J. were used to house the U.S. Radium Corporation, which was a radium-processing plant. The plant extracted and processed radium from carnotite ore. The purified radium was primarily sold for medical purposes, but also was added to luminous paint, which was painted on to dial and watch faces. Approximately a half ton of carnotite ore was processed each day from 1917 to 1926. Due to the discovery of a higher yield ore from the Congo, the radium extraction and processing activities at U.S. Radium ceased in 1926.

While the company ceased operations in the 1920s, the story of U.S. Radium has just begun. Waste from the plant was disposed of on and off the facility property, contaminating the facility itself and nearby properties with radium 226. Radium 226 emits ionizing radiation and decays into radon gas. People who are directly exposed to radiation, inhale radioactive dust particles, or inadvertently ingest radioactive particles may suffer adverse health effects in the form of an increased risk of certain types of cancer.

JUST THE FACTS:

- So far in 2002, \$3 million has been funded for cleanup operations.
- To date, funding for the cleanup has totaled \$103 million.
- More than 240 properties have been identified so far as having radium-contaminated soil due to operations at the former radium-processing facility; more than 123,000 tons of contaminated soil has been removed to date, and property investigations are still ongoing.

"Individual property owners of the affected properties are consulted throughout the cleanup process, and every attempt is made to answer their questions, address their concerns, and complete the work to their satisfaction."

Carol Petersen, Chief, New Jersey Remediation Branch, EPA Region 2

EPA Works to Clean Properties

Not only was the original 2-acre site in Orange, NJ, affected with radium, so were more than 240 residential properties throughout the municipalities of Orange, West Orange, and South Orange. Wasting no time, EPA promptly formulated solutions to begin the soil decontamination process by dividing the project into immediate actions and long-term remedies.

Immediate actions included the installation of radon mitigation systems and gamma radiation shielding on the properties that contained the highest levels of contamination, reducing further exposure of the harmful chemicals to the residents. In addition, a fence was installed around the main site to deter trespassers from coming into contact with the contaminants.

Long term remedy plans have been divided into eight (possibly nine) phases, and property investigations are still ongoing. When completed, each phase results in literally tons of contaminated soil and material being removed from the affected properties and disposed of at an approved off-site facility. To date, approximately 620 properties have been investigated, more than 240 properties have been found to be contaminated, and over 210 have already been cleaned up. Phases 1-6, in progress since January 1997, have resulted in the removal of more than 123,000 tons of radium contamination. The next phase is scheduled to start in September 2002. Future cleanup phases also have been planned, with overall cleanup expected to take approximately twelve years to complete.

Working with the Community

Since the cleanup began, EPA has been conscientious of the problems that the situation could pose to residents and businesses. EPA has taken measures to ensure that the cleanup effort is done effectively, quickly, and professionally to reduce the amount of disturbance to the neighbors and the affected properties.

EPA has worked individually with families during cleanup of their properties and has made a conscious effort to minimize the inconvenience caused by the work. For example, while most families are able to remain in their homes while the work is occurring, some families, when necessary, have been temporarily relocated from their homes to allow EPA to excavate the contaminated soil. In these cases, EPA has been able to move residents to nearby locations, so that their daily routines may continue as usual and their children may remain at the same school.

EPA's Petersen explained, "Individual property owners of the affected properties are consulted throughout the cleanup process, and every attempt is made to answer their questions, address their concerns, and complete the work to their satisfaction."

So far, the overall results of the project have proven positive for the community. As the cleanup of an individual property is completed, the property and neighboring properties should increase in value, because they are no longer affected by contamination. The anticipation of a safer, healthier, improved neighborhood is therefore growing in the minds of the residents.

EPA is still in the process of determining if additional properties in the surrounding area are contaminated with radium and other radioactive materials. In addition, EPA also will be initiating an investigation to determine if the groundwater has been contaminated from the U.S. Radium site. This will entail the installation of monitoring wells and is scheduled to begin sometime this year.

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Visit the EPA Region 2 web site at:
<http://www.epa.gov/region2/Superfund>



EPA supports a home as its contaminated foundation is removed and replaced